

**FUTURE FISHERIES IMPROVEMENT PROGRAM  
GRANT APPLICATION**

*(please fill in the highlighted areas)*

**I. APPLICANT INFORMATION**

A. Applicant Name: Spring Creek Landowners Corporation

B. Mailing Address: P. O. Box 171

C. City: Fort Harrison State: Montana Zip: 59636

Telephone: (406) 459-1938

D. Contact Person: Stefan Wall - President

Address if different from Applicant: Same as above

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Telephone: \_\_\_\_\_

E. Landowner and/or Lessee Name  
(if other than Applicant): Not applicable

Mailing Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Telephone: \_\_\_\_\_

**II. PROJECT INFORMATION\***

A. Project Name: Low-Water Crossing Removal in Skelly Gulch

River, stream, or lake: Skelly Gulch Creek, a tributary to Sevenmile Creek

Location: Township 11 North Range 5 West Section 33

County: Lewis and Clark County

B. Purpose of Project:

This project will eliminate one of the few low-water stream crossings that exist in Montana.

C. Brief Project Description: \_\_\_\_\_

An existing bridge to access the upper residences of the Spring Creek Homeowner's Corporation is under-sized, extremely narrow and it restricts access to larger vehicles like fire trucks, ambulances, snowplows, etc. Larger vehicles are forced use the existing low-water crossing to access the upper residences of the subdivision. The board and residents of Spring Creek would like to refurbish the bridge or replace the bridge with a culvert to accommodate the larger vehicles that travel across Skelly Gulch Creek to entirely eliminate the low-water crossing. Our association is limited in funding, so we have been researching viable alternatives for eliminating the low-water crossing. A board member contacted Trout Unlimited this past summer and they were very short on funding and were unable to assist in this project. The board recently hired Martin Drivdahl PE, a structural engineer to evaluate alternatives to move forward with the project. The board also solicited the services of a surveyor, Dan Dengel to assist in the alternatives analysis. The engineer evaluated three alternatives. The first would be to do nothing and continue to utilize the low-water crossing and continue to degrade the water quality of the Skelly Gulch Creek fishery. The second alternative would be to refurbish the existing bridge (Option 1). The third alternative would be to install a concrete arch pipe (Option 2).

The concrete arch pipe alternative was selected because it will require less future maintenance and because the curvature of the Skelly Gulch Road near the low-water crossing may create a driving hazard if the bridge is widened.

The Spring Creek Landowners Corporation has paid Martin Drivdahl PE, \$1,000 to conduct the engineering evaluation. Dan Dengel, a resident of Spring Creek and a surveyor, donated the equivalent of \$500 of time and expenditures to assist the engineer in the alternatives analysis. The entire project would cost \$47,238, minus the \$1,500 of in-kind cash and services the Spring Creek Homeowners Corporation has already allocated towards the project. Additionally, over the past two years the Spring Creek Landowners Corporation has also set aside enough money to cover the cost of the concrete arch pipe at \$7,132. Therefore, the Spring Creek Landowners Corporation is requesting a grant from the Future Fisheries Improvement Program in the amount of **\$38,606** to replace the existing bridge with a concrete arch pipe to eliminate the low-water crossing in Skelly Gulch Creek.

D. Length of stream or size of lake that will be treated: The benefits of the low-water crossing removal will improve fish habitat for several miles downstream in Skelly Gulch Creek.

E. Project Budget:

**Grant Request (Dollars):** \$ 38,606

Contribution by Applicant (Dollars): \$ 7,132 In-kind \$ \$1,500  
 (salaries of government employees are not considered as matching contributions)

Contribution from other Sources (Dollars): \$ In-kind \$  
 (attach verification - See page 2 budget template)

**Total Project Cost:** \$ 47,238

F. Attach itemized (line item) budget – see template

G. Attach specific project plans, detailed sketches, plan views, photographs, maps, evidence of landowner consent, evidence of public support, and/or other information necessary to evaluate the merits of the project. If project involves water leasing or water salvage complete supplemental questionnaire (fwp.mt.gov/habitat/futurefisheries/supplement2.doc).

H. Attach land management and maintenance plans that will ensure protection of the reclaimed area.

### III. PROJECT BENEFITS\*

A. What species of fish will benefit from this project?:

Brook trout

B. How will the project protect or enhance wild fish habitat?:

The project will replace the bridge with a concrete arch pipe of the appropriate diameter, length and slope. The arch pipe installation will eliminate the existing low-water crossing that larger vehicles frequently use to access the upper reaches of the Spring Creek residences. The elimination of the low-water crossing will eliminate heavy sediment loads in the lower reaches of Skelly Gulch Creek thereby enhancing the habitat of this fishery.

C. Will the project improve fish populations and/or fishing? To what extent?:

The outcome of the project will likely improve fish populations downstream from the project site. The increase in fish populations will, in turn, provide better fishing opportunities to recreationists. The increased sediment loads have and continue to contribute to the degradation of this fishery downstream from the low-water crossing. Increased sediment loads negatively affect fish populations by 1) decreasing benthic macroinvertebrates populations which are a key food source for salmonids, 2) can cause clogging of gill tissues necessary for breathing and 3) can cause loss of spawning grounds. Eliminating the sediment loads caused by the low-water crossing would definitely result in better habitat conditions, which would result in increased salmonid populations and increased opportunities for anglers.

D. Will the project increase public fishing opportunity for wild fish and, if so, how?:

Please refer to the answer to question C.

E. If the project requires maintenance, what is your time commitment to this project?:

The project will be designed to minimize any future maintenance. Any maintenance of the new arch pipe, if any is necessary, will be conducted in perpetuity by the residents of the Spring Creek Homeowner's Association.

F. What was the cause of habitat degradation in the area of this project and how will the project correct the cause?:

Frequent vehicle use of the low-water crossing has contributed to the deterioration of the fishery in Skelly Gulch Creek in excess of two decades. The elimination of the low-water crossing will improve downstream fish habitat and populations in this creek for future generations.

G. What public benefits will be realized from this project?:

An increase in angling opportunities for the residents of Spring Creek and their families and guests.

H. Will the project interfere with water or property rights of adjacent landowners? (explain):

The project will not interfere with water or property rights of any nearby or adjacent landowners.

I. Will the project result in the development of commercial recreational use on the site?: (explain):

This project will not result in the development of commercial recreational use at the site.

J. Is this project associated with the reclamation of past mining activity?:

This project is not associated with any known past mining activity.

**Each approved project sponsor must enter into a written agreement with the Department specifying terms and duration of the project.**

#### IV. AUTHORIZING STATEMENT

I (we) hereby declare that the information and all statements to this application are true, complete, and accurate to the best of my (our) knowledge and that the project or activity complies with rules of the Future Fisheries Improvement Program.

Applicant Signature: \_\_\_\_\_

*A. Steyer for SCCC*

Date: \_\_\_\_\_

4/30/12

Sponsor (if applicable): \_\_\_\_\_

**\*Highlighted boxes will automatically expand.**

**Mail To: Montana Fish, Wildlife & Parks  
Habitat Protection Bureau  
PO Box 200701  
Helena, MT 59620-0701**

**Incomplete or late applications will be returned to applicant.**

**Applications may be rejected if this form is modified.**

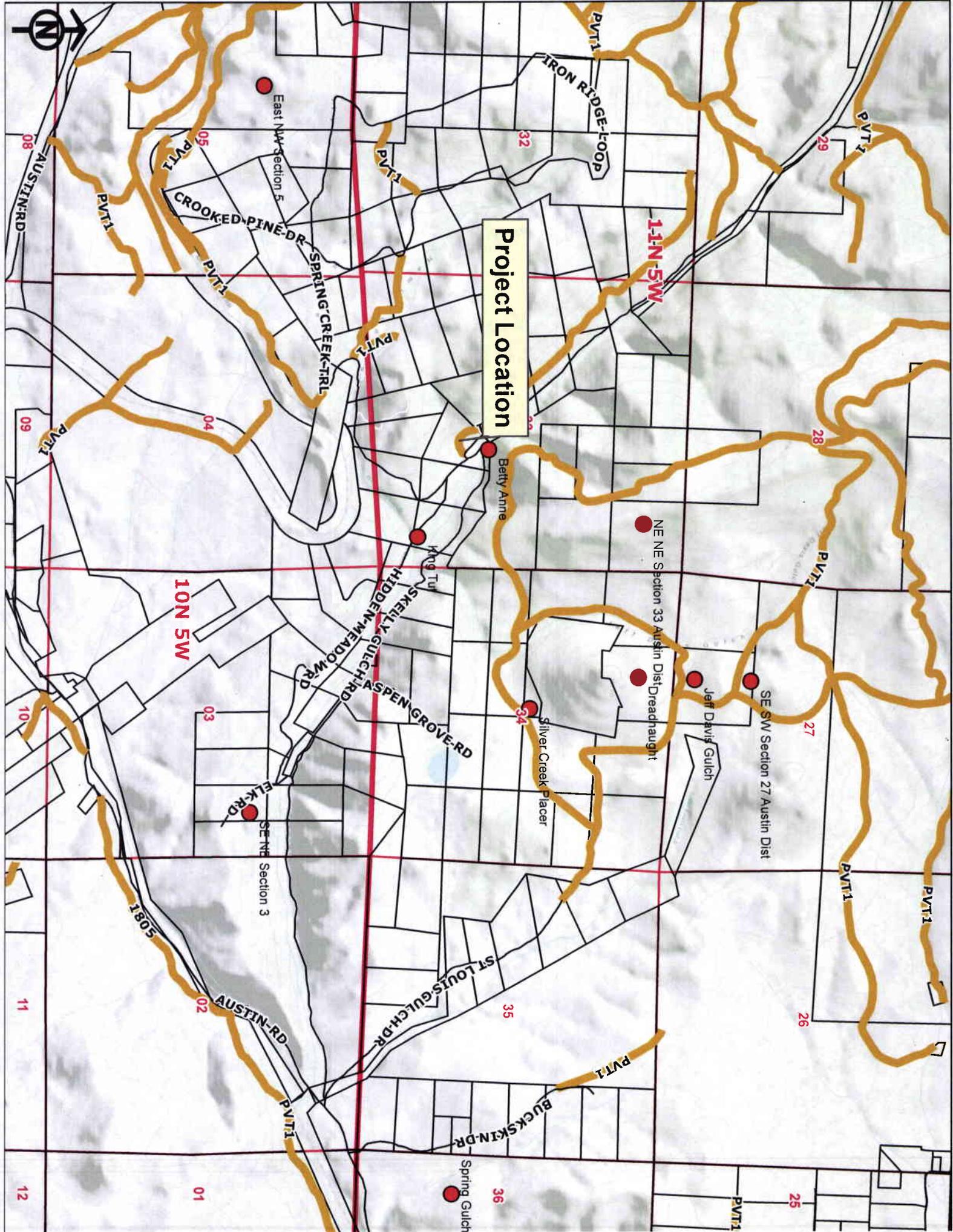
**\*\*\*Applications may be submitted at anytime, but must be received by the Future Fisheries Program office in Helena before December 1 and June 1 of each year to be considered for the subsequent funding period.\*\*\***

# Budget Template





## **Project Location Map**



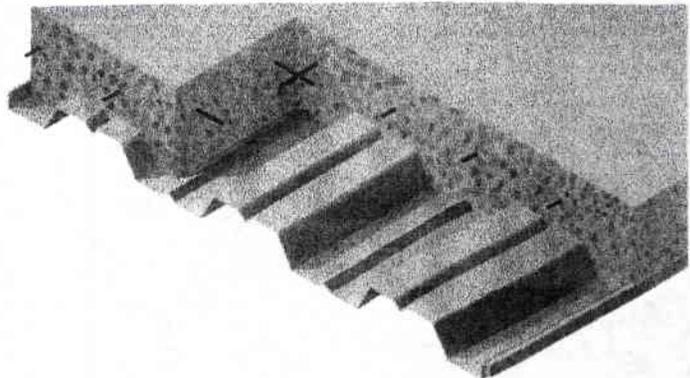
**Project Location**



Map labels include:

- Section numbers: 01, 02, 03, 04, 05, 08, 09, 10, 11, 12, 25, 26, 27, 28, 29, 32, 33, 34, 35, 36
- Roads: AUSTIN RD, CROOKED PINE DR, SPRING CREEK TRL, HIDDEN MEADOW RD, ASPEN GROVE RD, ST LOUIS GULCH DR, BUCKSKIN DR, IRON RIDGE LOOP, ELK RD
- Landmarks: Spring Gulch, Silver Creek Placer, Jeff Davis Gulch, NE NE Section 33 Austin Dist/Dreadhaught, SE SW Section 27 Austin Dist
- Other: East NW Section 5, King Tur, PVT1, 1805

## **Option 1 – Bridge Widening**



**SECTION PROPERTIES**

$F_y = 33 \text{ Ksi}$

Type No.	Design Thickness	Lbs./Ft. <sup>2</sup>		I In <sup>4</sup> /Ft.	Sp In <sup>3</sup> /Ft.	S <sub>n</sub> In <sup>3</sup> /Ft.
		Black ▲	Galv.			
3C22	0.0295	1.77	1.87	0.773	0.445	0.472
3C20	0.0358	2.14	2.24	0.964	0.674	0.605
3C18	0.0474	2.84	2.94	1.276	0.810	0.809
3C16	0.0598	3.58	3.68	1.612	1.019	1.019

▲ Also available painted.

**ALLOWABLE UNIFORM LOAD (PSF)**

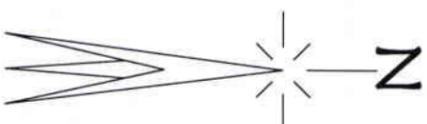
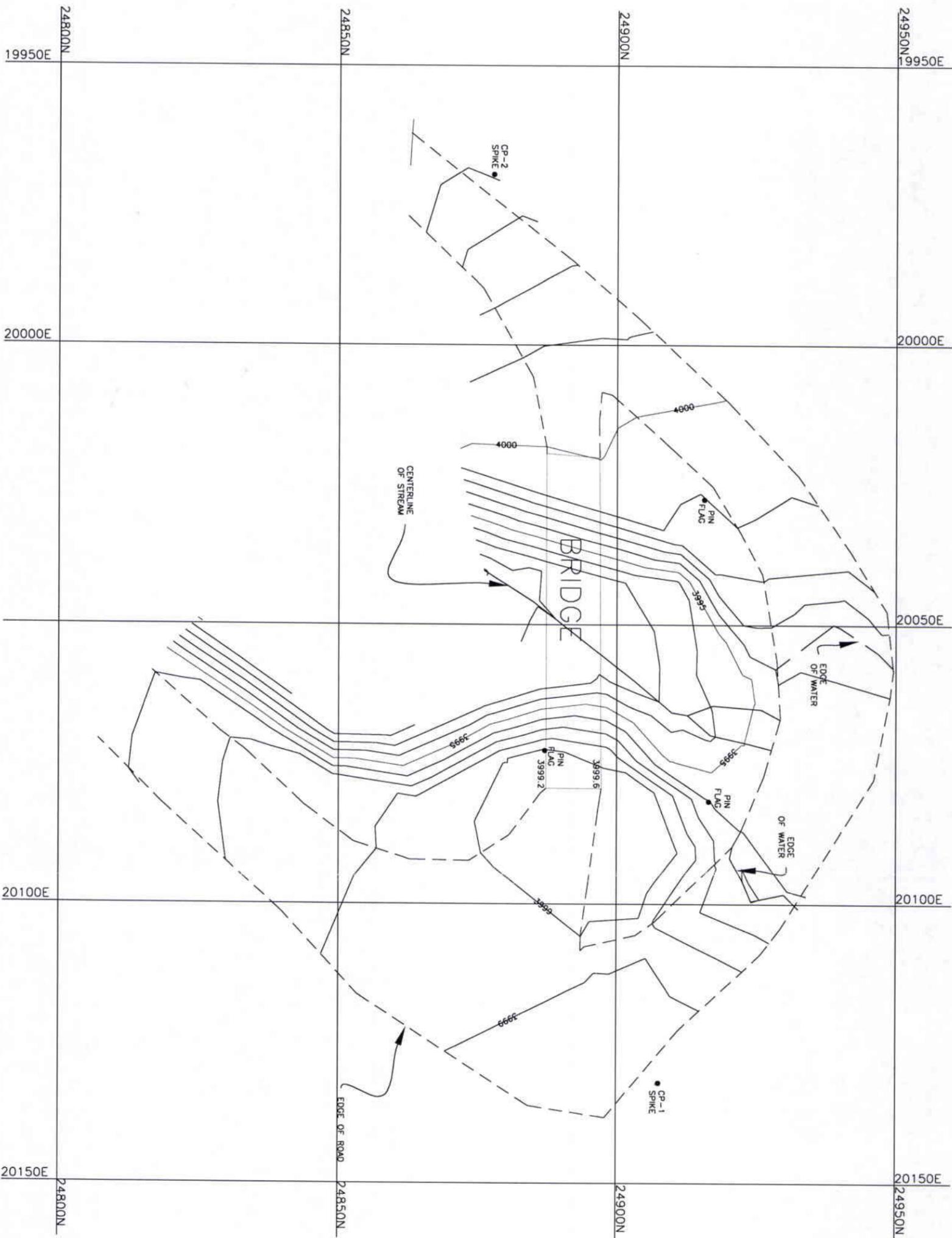
Type No.	No. of Spans	Design Criteria	Clear Span (ft.-in.)														
			7-0	7-6	8-0	8-6	9-0	9-6	10-0	10-6	11-0	11-6	12-0	12-6	13-0	13-6	14-0
3C22	1 Span	Stress 20,000	121	105	93	82	73	66	59	54	49	45	41	38	35	33	30
		$\Delta = l/240$	121	105	93	82	70	59	51	44	38	33	29	26	23	21	19
		$\Delta = l/180$	121	105	93	82	73	66	59	54	49	45	39	35	31	28	25
		SDI Criteria	52	44	37	31	27	23	20	17	15	13	11	9	8	7	6
	2 Span	Stress 20,000	128	112	98	87	78	70	63	57	52	48	44	40	37	35	32
		$\Delta = l/240$	128	112	98	87	78	70	63	57	52	48	44	40	37	35	32
		$\Delta = l/180$	128	112	98	87	78	70	63	57	52	48	44	40	37	35	32
		SDI Criteria	108	92	78	67	58	50	43	37	32	28	24	20	17	15	12
	3 Span	Stress 20,000	161	140	123	109	97	87	79	71	65	59	55	50	47	43	40
		$\Delta = l/240$	161	140	123	109	97	87	79	71	65	59	55	49	44	39	35
		$\Delta = l/180$	161	140	123	109	97	87	79	71	65	59	55	50	47	43	40
		SDI Criteria	115	98	83	72	62	54	47	41	36	31	27	23	20	17	14
3C20	1 Span	Stress 20,000	156	136	120	106	94	85	77	69	63	58	53	49	45	42	39
		$\Delta = l/240$	156	136	120	103	87	74	63	55	48	42	37	33	29	26	23
		$\Delta = l/180$	156	136	120	106	94	85	77	69	63	56	49	43	39	34	31
		SDI Criteria	76	64	55	47	41	35	31	27	24	21	19	17	15	13	12
	2 Span	Stress 20,000	165	143	126	112	100	89	81	73	67	61	56	52	48	44	41
		$\Delta = l/240$	165	143	126	112	100	89	81	73	67	61	56	52	48	44	41
		$\Delta = l/180$	165	143	126	112	100	89	81	73	67	61	56	52	48	44	41
		SDI Criteria	145	123	106	92	80	69	61	53	47	41	36	32	28	24	21
	3 Span	Stress 20,000	206	179	158	140	124	112	101	91	83	76	70	65	60	55	51
		$\Delta = l/240$	206	179	158	140	124	112	101	91	83	76	69	61	54	48	43
		$\Delta = l/180$	206	179	158	140	124	112	101	91	83	76	70	65	60	55	51
		SDI Criteria	156	133	115	99	86	75	66	58	51	45	40	35	31	27	24
3C18	1 Span	Stress 20,000	220	192	169	149	133	120	108	98	89	82	75	69	64	59	55
		$\Delta = l/240$	220	192	164	136	115	98	84	72	63	55	48	43	38	34	31
		$\Delta = l/180$	220	192	169	149	133	120	108	96	84	73	65	57	51	45	41
		SDI Criteria	118	101	88	76	67	59	52	46	41	37	33	30	27	25	22
	2 Span	Stress 20,000	220	192	169	149	133	120	108	98	89	82	75	69	64	59	55
		$\Delta = l/240$	220	192	169	149	133	120	108	98	89	82	75	69	64	59	55
		$\Delta = l/180$	220	192	169	149	133	120	108	98	89	82	75	69	64	59	55
		SDI Criteria	200	172	149	129	113	100	88	78	69	62	55	49	44	39	35
	3 Span	Stress 20,000	275	240	211	187	166	149	135	122	111	102	94	86	80	74	69
		$\Delta = l/240$	275	240	211	187	166	149	135	122	111	102	91	81	72	64	58
		$\Delta = l/180$	275	240	211	187	166	149	135	122	111	102	94	86	80	74	69
		SDI Criteria	215	185	160	139	122	108	95	85	75	67	60	54	48	43	39
3C16	1 Span	Stress 20,000	277	242	212	188	168	151	136	123	112	103	94	87	80	75	69
		$\Delta = l/240$	277	242	207	172	145	123	106	91	80	70	61	54	48	43	39
		$\Delta = l/180$	277	242	212	188	168	151	136	122	106	93	82	72	64	57	51
		SDI Criteria	156	134	117	102	90	79	71	63	57	51	46	42	38	35	32
	2 Span	Stress 20,000	277	242	212	188	168	151	136	123	112	103	94	87	80	75	69
		$\Delta = l/240$	277	242	212	188	168	151	136	123	112	103	94	87	80	75	69
		$\Delta = l/180$	277	242	212	188	168	151	136	123	112	103	94	87	80	75	69
		SDI Criteria	257	222	192	168	148	131	116	103	92	83	74	67	60	55	49
	3 Span	Stress 20,000	347	302	265	235	210	188	170	154	140	128	118	109	100	93	87
		$\Delta = l/240$	347	302	265	235	210	188	170	154	140	128	115	102	91	81	73
		$\Delta = l/180$	347	302	265	235	210	188	170	154	140	128	118	109	100	93	87
		SDI Criteria	276	238	207	181	159	141	125	112	100	90	81	73	66	60	54

CSV - Designates conform with slot vents for poured roofs of lightweight insulating concrete. See page 32.  
 SDI Criteria refers to maximum load in addition to construction loading. See Section 3.2a & 3.2b, pages 28 & 29.



# BRIDGE TOPO

EXHIBIT A



### CERTIFICATE OF SURVEYOR

I, DANIEL E. DENGEL, A LICENSED PROFESSIONAL LAND SURVEYOR IN THE STATE OF MONTANA, DO HEREBY CERTIFY THAT THIS IS A TRUE REPRESENTATION OF A SURVEY MADE UNDER MY DIRECT SUPERVISION.

DANIEL E. DENGEL, MONTANA REG. NO. 147331LS

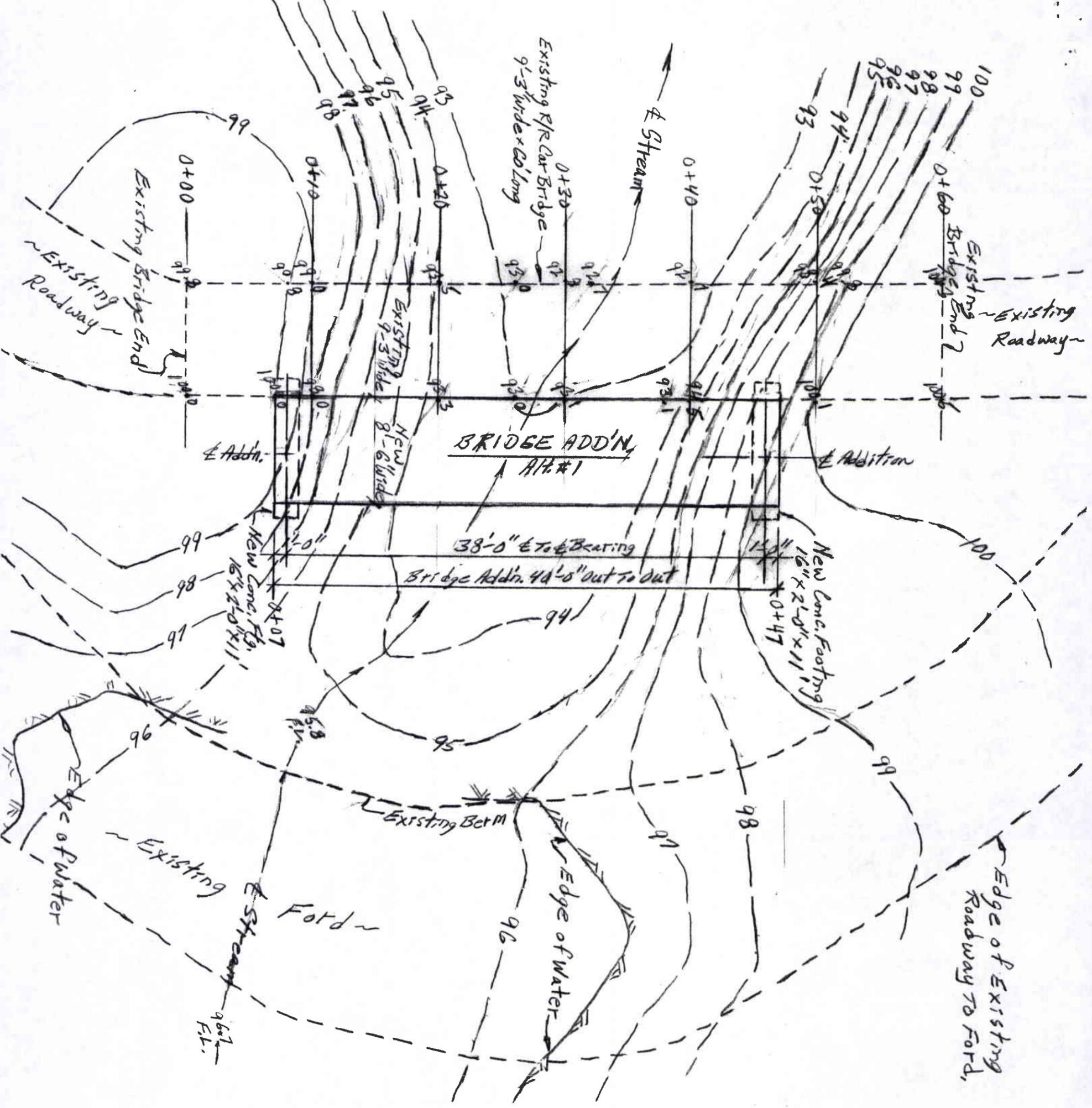
DENGEL SURVEYING  
HELENA, MONTANA

Scale:



Date: November 6, 2012

County: Lewis & Clark P.V., M. Job No.: 12010



SKELLY GULCH ROAD CROSSING

PLAN VIEW - ALTERNATIVE #1

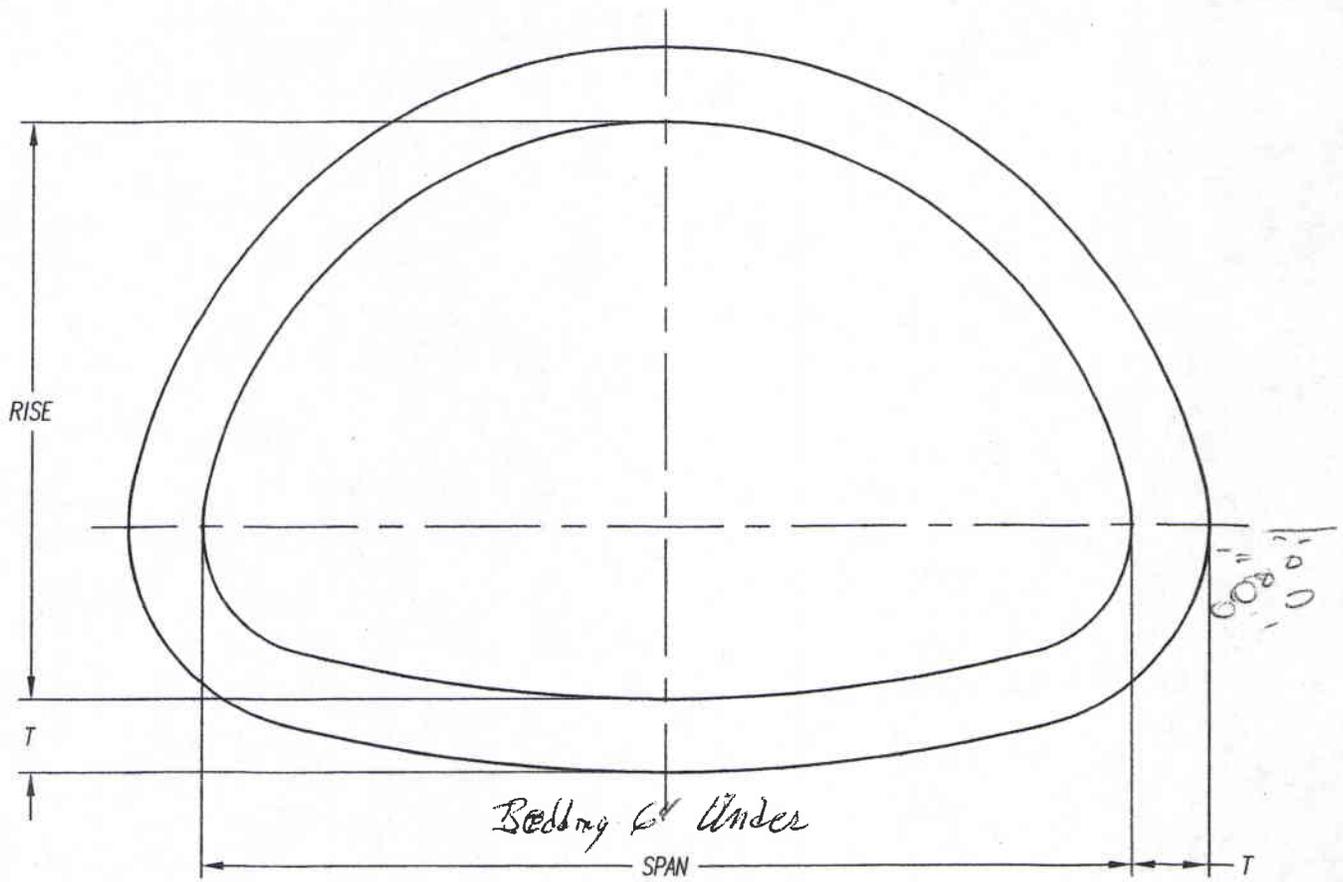
Scale: 1/8" = 1'-0"

Prepared By: Martin R. Drisdahl, P.E.

11/09/12



**Option 2 – Install Concrete Arch Pipe**



**TYPICAL CROSS SECTION**

EQUIV. DIA.	RISE	SPAN	WATER AREA	T	WT./FT.	O. D. AREA
in	in	in	sq. ft.	in	lbs	sq. ft.
18 *	13-1/2	22	1.6	3	170	2.78
24 *	18	28-1/2	2.8	3-1/2	315	4.87
30 *	22-1/2	36-1/4	4.4	4	445	7.39
36 *	26-5/8	43-3/4	6.4	4-1/2	600	10.27
42	31-5/16	51-1/8	8.8	4-1/2	690	13.24
48	36	58-1/2	11.4	5	875	17.22
54	40	65	14.3	5-1/2	1065	21.17
60	45	73	17.7	6	1305	26.48
72	54	88	25.6	7	1830	37.86
84	62	102	34.6	8	2415	50.37
96	77-1/2	122	51.7	9	3510	75.04
108	87-1/8	138	66.0	10	4400	95.33
120	96-7/8	154	81.8	11	5400	117.83
132	106-1/2	168-3/4	99.1	10	5390	134.32

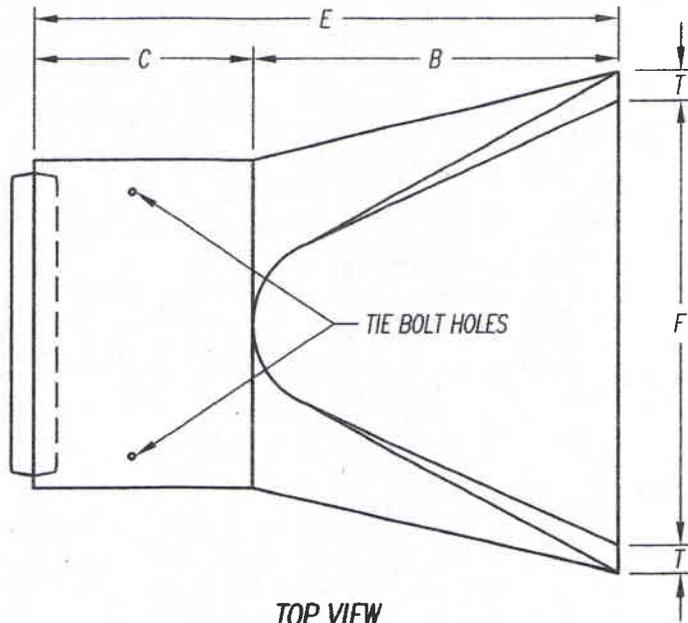
\* WALL THICKNESS  
1/2" GREATER THAN B-WALL

12" Min Cover →  
8' Laying Lengths →  
H20 Loading →

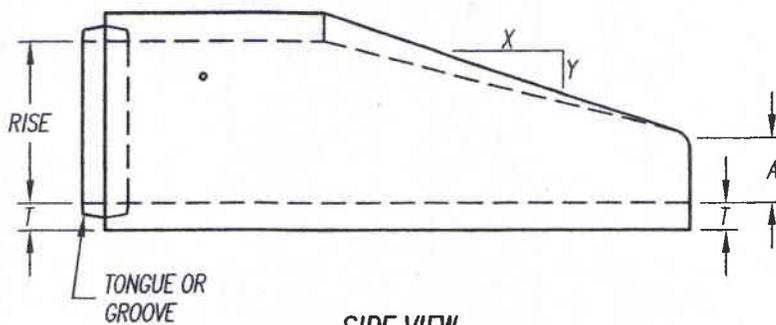
#127/LF.  
#162/LF At The Yard  
#226/LF

1. Arch pipe is manufactured with a tongue and groove joint to standard or special strengths in accordance with ASTM C506.

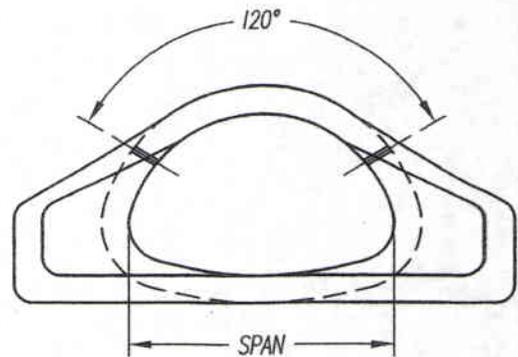
		<b>OFFICES IN:</b> BISMARCK    HELENA    RAPID CITY	
SCALE	none	<b>CONCRETE ARCH PIPE DIMENSIONS</b>	
DATE	8/16/07		
DRN.	CLH		
REVISION DATE	none	DRAWING NUMBER	1110-15



**TOP VIEW**



**SIDE VIEW**



**END VIEW**

EQUIV. DIA.	WEIGHT	RISE	SPAN	SLOPE	T	A	B	C	E	F
in	lbs.	in	in	X TO Y	in	in	in	in	in	in
18	1090	13-1/2	22	3 TO 1	2-1/2	7	27	45	72	36
24	1760	18	28-1/2	3 TO 1	3-1/2	8-1/2	39	33	72	48
30	3280	22-1/2	36-1/4	3 TO 1	4	9-1/2	50	46	96	60
36	4330	26-5/8	43-3/4	3 TO 1	4-1/2	11-1/8	60	36	96	72
42	5260	31-5/16	51-1/8	3 TO 1	4-1/2	15-13/16	60	36	96	78
48	6380	36	58-1/2	3 TO 1	5	21	60	36	96	84
54	7860	40	65	3 TO 1	5-1/2	25-1/2	60	36	96	90
→ 60	9520	45	73	3 TO 1	6	31	60	36	96	96
72	13550	54	88	2 TO 1	7	31	60	39	99	120
84	20000	62	102	2 TO 1	8	21-1/2	84	18	102	144

\$944  
~~\$110~~  
~~\$1500~~

1. Manufactured in accordance with applicable portions of ASTM C506.
2. Reinforcement per class 2 RCP with double reinforcement in the upper 120 degrees of the full barrel portion.

		OFFICES IN:	
		BISMARCK	HELENA RAPID CITY
SCALE	none	TITLE	
DATE	5/14/04	FLARED END SECTIONS FOR ARCH PIPE	
DR'N.	RTF		
REVISION DATE	none	DRAWING NUMBER	1140-10

Skelly Gulch Cr. Crossing

Pre-lim. cost calculation

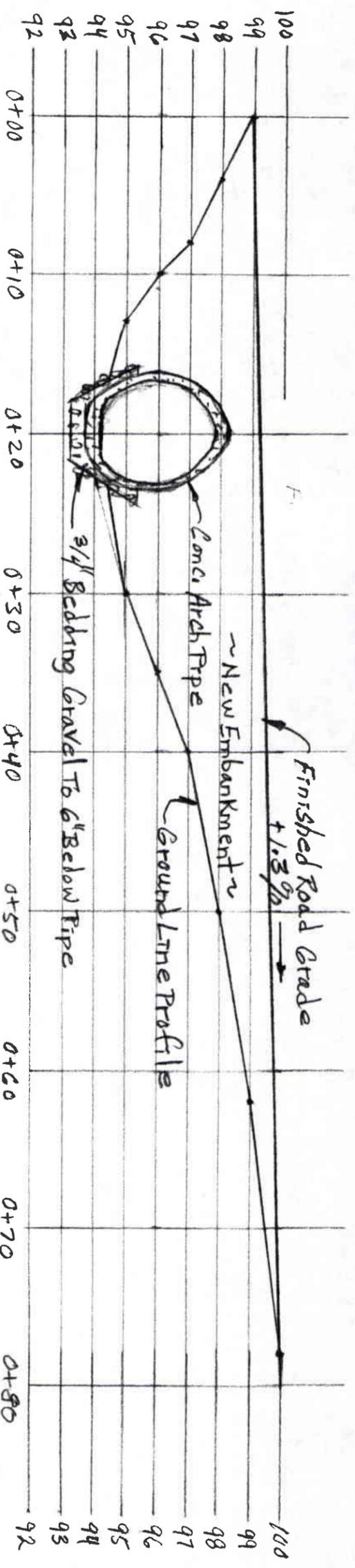
Prepared by Bill Pierre 11-26-12

Option #1 Bridge widening

General Requirements	\$ 3,785
Site work + Equipment	13,364
Concrete + related	6,907
Structural steel + related	12,877
Contractors Profit + Overhead	7,609
Total	= \$ 44,542

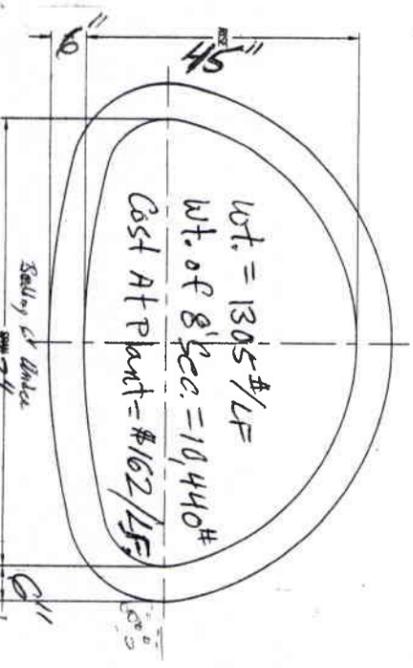
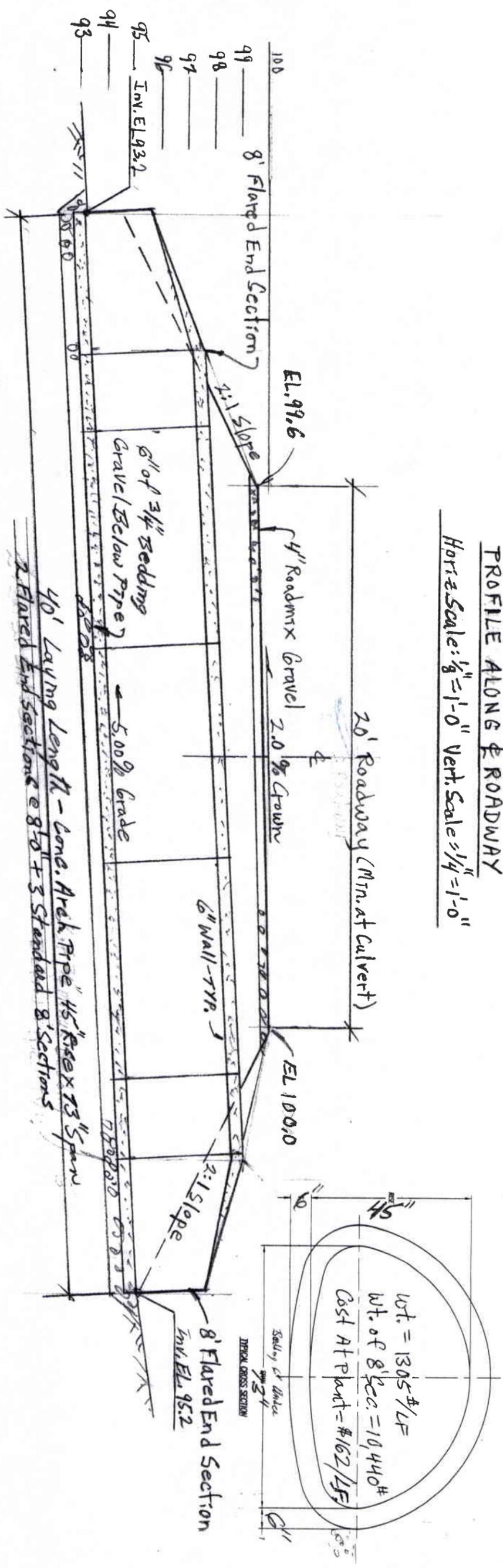
Option #2 Concrete Arch Pipe 40'

General Requirements	\$ 3,768
Site work + Equipment	21,026
Concrete pipe (F.O.B. yard)	7,132
Contractor's Profit + Overhead	7,812
Total	= \$ 45,738



PROFILE ALONG ROADWAY

Horiz. Scale:  $\frac{1}{8}'' = 1'-0''$  Vert. Scale:  $\frac{1}{4}'' = 1'-0''$



Wt. = 1305#/LF  
 Wt. of 8" SCC = 10,440#  
 Cost At Plant = \$162/LF

PROFILE OF CONCRETE PIPE ARCH CULVERT

Scale:  $\frac{1}{4}'' = 1'-0''$

SKELLEY GULCH PROJECT 11/14/12

ALTERNATE NO. 2 - CONC. PIPE

Prepared by: Martin R. Drivdahl, PE